

# Curriculum Vitae

## Lei Wang

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## Education:

2007---now: PhD program in Algorithms, Combinatorics and Optimization,  
School of Computer Science, College of Computing,  
Georgia Institute of Technology, US.  
Advisor: Dr. Vijay Vazirani and Dr. Nina Balcan

2002---2006: Tsinghua University, China.  
Bachelor's degree in Applied Mathematics,  
Advisor: Dr. Keqin Feng

## Work Experience:

- Intern, Microsoft Research, Beijing. (June,09---Aug,09)
- Intern, Microsoft Ad center, Redmond. (May,10---Aug 10)

## Teaching Experience:

- CS 2602, Discrete Math, Fall 2007
- Math 1502, Calculus II, Spring 2008
- Math 2401, Calculus III, Summer 2008
- Math 1501, Calculus I, Spring 2009
- CS6337, Numerical analysis, Spring 2010

## Honors and Awards:

- ACO Excellent Student Award of the year 2007---2008
- Award of Excellent Graduation Thesis of Tsinghua University in 2006
- Scholarship for Excellent Study in Tsinghua University of the year 2004---2005
- Scholarship for Excellent Study in Tsinghua University of the year 2003---2004
- Scholarship for Excellent Study in Tsinghua University of the year 2002---2003
- First prize of the 16<sup>th</sup> National Olympics in Mathematics of China in 2001
- First prize of the 6<sup>th</sup> National Olympics in Informatics of China in 2001
- First prize of the 5<sup>th</sup> National Olympics in Informatics of China in 2000

### **Research Interest:**

- Algorithm design
  - Approximation and randomized algorithms for NP hard problems
  - Learning and optimization problems related to submodular functions
- Game theory
  - Mechanism design
  - Market equilibrium computation

### **Conference Publications:**

- Combinatorial problems with discounted price functions,  
with G.Goel and P.Tripathi  
*30th Foundations of Software Technology and Theoretical Computer Science (FSTTCS'10)*.
- Single-parameter combinatorial auctions with partially public valuations,  
with G.Goel and C.Karande  
*3rd International Symposium on Algorithmic Game Theory (SAGT'10)*.
- An Optimal Algorithms for the Weighted Rectilinear Facility Location Problem,  
with X.Wang  
*2010 International Conference on Modeling, Simulation and Control (ICMSC'10)*.
- Approximability of combinatorial problems with multi-agent submodular cost functions,  
with G.Goel, C.Karande and P.Tripathi  
*50<sup>th</sup> Annual symposium on Foundations Of Computer Science (FOCS'09)*.
- Continuity properties of some Fisher and Arrow-Debreu Markets,  
with V.Vazirani  
*5<sup>th</sup> international Workshop on Internet and Network Economics (WINE'09)*.
- An efficient algorithm for the longest pattern subsequence problem,  
with X.Wang  
*Bioinformatics and Computational Biology (BIOCOMP'08)*.
- Efficiency, fairness and competitiveness in Nash bargaining games,  
with D.Chakrabarty, G.goel, V.vazirani and C.Yu  
*4<sup>th</sup> international Workshop on Internet and Network Economics (WINE'08)*.

### **Journal Publications:**

- Constructing symmetric Boolean functions with maximum algebraic immunity,  
with K.Feng  
*IEEE Transaction on Information Theory, 2009.*

- An optimal algorithm for Puffer codes,  
with X.Wang  
*Journal of Software Engineering and its Applications, 2009.*

#### **Working Papers:**

- Black-box reductions in mechanism design,  
with Z.Huang and Y.Zhou.
- Truthful mechanisms v.s. Approximation algorithms: An irreconcilable conflict  
with G.Goel.
- Submodularity helps in Nash bargaining,  
with D.Chakrabarty, G.Goel, V.vazirani and C.Yu.
- A complete characterization of Pareto optimal and group-strategyproof  
mechanisms for facility games,  
with P.Lu and Y.Wang.

#### **Invited Talks:**

- Single-parameter combinatorial auctions,  
*China Theory Week, Beijing, Sep 17<sup>th</sup>, 2010.*
- Continuity of Equilibrium in the Eisenberg-Gale Market,  
*5th Workshop on Internet and Network Economics, Rome, Dec 17<sup>th</sup>, 2009.*
- Submodular combinatorial optimization,  
*Microsoft Research, Asia, Aug 10<sup>th</sup>, 2009.*
- Nash Bargaining Games,  
*ACO seminar, Atlanta, Georgia Tech, Nov 19<sup>th</sup>, 2008.*
- Continuity of the Equilibrium in Fisher's Market Model,  
*INFORMS08, Washington DC, Oct 11<sup>th</sup>, 2008.*
- Algebraic Immunity,  
*International workshop on Finite Field, Coding and Cryptography, Beijing, China, July 5<sup>th</sup>, 2006.*

**Programming Skills:** C,C++,C#, Java, Matlab